



PATENT APPLICATION  
Mo-6657  
LeA 34,814

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF	)	
KARL-HEINZ DORNER ET AL	)	GROUP NO.: 1711
SERIAL NUMBER: 10/047,365	)	
FILED: JANUARY 14, 2002	)	EXAMINER: T.T. TRAN
TITLE: SOLAR MODULES WITH A	)	
TRANSPARENT POLYURETHANE	)	
FRONT SIDE AND A PROCESS FOR	)	
PRODUCING SAME	)	

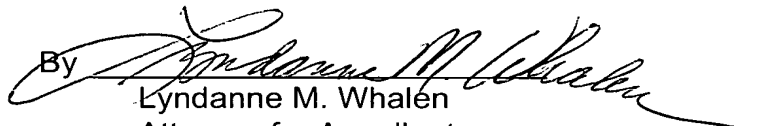
**LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2231-1450

Sir:

Enclosed is an Appeal Brief in the matter of the subject Appeal. Please charge the fee for filing the Brief, \$340.00, to our Deposit Account Number 13-3848. Triplicate copies of this paper are enclosed.

Respectfully submitted

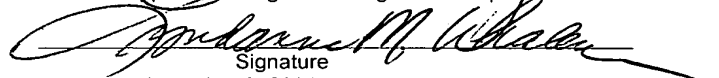
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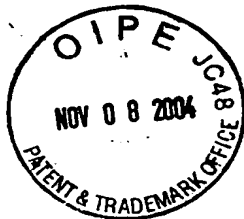
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LMW/032

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 11/03/04

Date  
Lyndanne M. Whalen, Reg. No. 29,457  
Name of applicant, assignee or Registered Representative

  
Signature  
November 3, 2004  
Date



AF 1211  
JFW

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PRODUCING SAME )

**APPEAL BRIEF**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This Brief is an Appeal from the Final Action of the Examiner dated May 28, 2004 in which the rejections of Claims 1-8 were maintained.

1. **REAL PARTY IN INTEREST**

Each of the named inventors has assigned his interest in this application to Bayer Aktiengesellschaft, a German corporation. The real party in interest in this Appeal is therefore Bayer Aktiengesellschaft.

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11/03/04

Date

Lyndanne M. Whalen, Reg. No. 29,457

Name of applicant, assignee or Registered Representative

Signature

November 3, 2004

Date

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2. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings which are related to, affected by or have a bearing on the Board's decision in this Appeal.

3. STATUS OF CLAIMS

Claims 1-8 stand rejected.

Claims 9-11 have been withdrawn from consideration.

Claims 1-8 are the subject of this Appeal.

4. STATUS OF AMENDMENTS

No amendments to the claims have been made or requested subsequent to the Final Action of the Examiner.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 (the only independent claim in this Appeal) is directed to a solar module comprising a) at least one solar cell **3**, b) a front side composed of transparent polyurethane **1** (page 4, line 25-page 5, line 6 and page 5, line 16-page 6, line 3 of the specification), and c) a rear side **2** (Figure 2), **5** (Figure 3) (discussed at page 5, lines 7-15 and page 6, lines 8-16).

6. GROUND OF REJECTION

- A. Claims 1-3 stand rejected under 35 U.S.C. §102(b) as being anticipated by Vaverka et al (U.S. Patent 5,667,595).
- B. Claims 4-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vaverka et al (U.S. Patent 5,667,595) in view of Shiomi et al (U.S. Patent 6,245,987).
- C. Claims 7-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vaverka et al (U.S. Patent 5,667,595).

## 7. ARGUMENTS

### A. Claims 1-3 are not anticipated by Vaverka et al.

Vaverka et al discloses solar modules containing a front **glass** plate, a rear support plate and solar cells placed between these plates. The hollow space between the plates is filled with a cast polyether-polyurethane resin.

Appellants' claimed invention requires a front "side" composed of transparent polyurethane 1. "Side" is defined in Webster's New Collegiate Dictionary at page 1077 (previously provided to the Examiner) as "a surface forming a border or face of an object" or "an outer portion of something considered as facing in a particular direction <the upper side of a sphere>".

Vaverka et al does not teach a solar module having a front side composed of transparent polyurethane. The front side of the Vaverka et al solar module is composed of glass.

The teachings of Vaverka et al do not therefore anticipate Appellants' claimed invention.

The Examiner has maintained that Appellants' argument regarding the front side of the Vaverka et al solar module is not persuasive because "side" may also be defined as "the right or left part of the wall or trunk of the body" or "place, space, or direction with respect to a center or to a line of division (as of an aisle, river, or street)."

Appellants maintain that the Examiner's construction of the term "side" is not consistent with the teachings in their specification.

It is well established that the terms in claims are best construed in light of the specification. See, e.g., Envirotech Corp. v Al George, Inc. et al, 221 U.S. P.Q. 473 (CAFC 1984).

Appellants submit that the other "definitions" for "side" referred to by the Examiner would not include the embodiments of Appellants' invention illustrated in Figures 1, 2 and 3. Nor would these "definitions" be consistent with the discussion of the invention in the specification or with the embodiments of the present invention illustrated in Figures 1, 2 and 3.

More specifically, it is readily apparent from each of the embodiments of the invention illustrated in Figures 1, 2 and 3 that the transparent polyurethane 1 is shown on both the right and left sides of the solar module.

Only when "side" is defined as the "face" or "surface" of the solar module are the modules illustrated in Figures 1, 2 and 3 within the scope of Appellants' claims.

Further, Appellants' use of "front side" is consistent with the meaning of "front plate" in the Vaverka et al reference. Even if the "front side" of Appellants' claimed module were the right or left part or "side" of that module, that "side" must still be composed of transparent polyurethane and **not** the glass taught by Vaverka et al.

Therefore, even the Examiner's strained construction of the prior art would not anticipate Appellants' claimed invention requiring a transparent polyurethane side.

The Examiner has also argued that the polyurethane resin used to fill the hollow space between the solar cells of Vaverka et al is the same as Appellants' "front side" of transparent polyurethane. Appellants respectfully disagree.

Even if the polyurethane resin of Vaverka et al were considered a "side", that polyurethane resin would be between two solar cells or between one of the plate surfaces and a solar cell or between a plate and an adhesive strip along the plate edge. It would **not** be the "front side" as required in Appellants' claimed invention.

The teachings of Vaverka et al can not therefore be construed in any manner which would teach to those skilled in the art a solar module having the front transparent polyurethane surface **1** required in Appellants' claimed invention.

B. Claims 4-6 are not rendered obvious by the combined teachings of Vaverka et al and Shiomi et al.

As has already been discussed, Vaverka et al requires a front side which is composed of glass and **not** the transparent polyurethane required in Appellants' claimed invention. Vaverka et al does not contain any teaching which would lead one skilled in the art to modify the disclosed solar modules to replace the glass front plate with any other material much less the transparent polyurethane required in the present invention.

Shiomi et al discloses solar cell modules but does **not** teach or suggest a solar cell module having a front side composed of transparent polyurethane.

The teachings of Shiomi et al and Vaverka et al can not therefore be combined in any manner which would lead one skilled in the art to a solar module having a front side composed of transparent polyurethane. The combined teachings of Vaverka et al and Shiomi et al do not therefore support the rejection of Appellants' claimed invention which requires a front side composed of transparent polyurethane 1.

The Examiner has argued that Shiomi et al was cited solely as teaching an opaque polyurethane rear side of a solar module.

As has already been discussed, Vaverka et al does not teach or suggest a solar module having the transparent polyurethane front side of Appellants' invention. Combination of Shiomi et al's teaching with respect to the rear side of a solar module with the teachings of Vaverka et al can not therefore lead one skilled in the art to solar cell modules having a front side composed of transparent polyurethane.

The combined teachings of Vaverka et al and Shiomi et al do not therefore support the rejection of Appellants' claimed invention which requires a front side composed of transparent polyurethane 1.

C. The teachings of Vaverka et al do not render obvious Appellants' invention as claimed in Claims 7-8.

As has already been discussed, Vaverka et al does not disclose a solar module having a front side composed of transparent polyurethane as is required in the present invention. Nor does Vaverka et al suggest that the glass plate required in the reference solar modules could be replaced with any other material, much less transparent polyurethane.

The teachings of Vaverka et al can not therefore be construed in any manner which would render obvious Appellants' invention requiring a transparent polyurethane front side 1.

Further, Appellants' Claim 7 requires a front side with a textured surface.

Vaverka et al does not even mention a textured surface much less suggest that there would be any advantage or reason for replacing the glass

plate disclosed therein for a polyurethane textured surface such as that which is required in Appellants' claimed invention.

A rejection under 35 U.S.C. §103(a) must have a factual basis. No factual basis for the rejection of Claim 7 has been cited by the Examiner.

It should also be noted that Appellants' invention as claimed in Claim 8, requires a rear side constructed in the form of cooling fins.

Vaverka et al does not even mention such cooling fins much less suggest that they be included as the back plate in the solar modules disclosed therein. Vaverka et al does not therefore provide the necessary factual basis for a proper rejection of Appellants' claims under 35 U.S.C. §103(a).

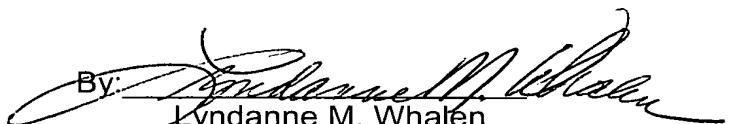
#### 8. CONCLUSION

Neither Vaverka et al nor Shiomi et al teaches or suggests a solar module having the transparent polyurethane front side of Appellants' claimed solar module.

The teachings of Vaverka et al and Shiomi et al can not therefore be combined or construed in any manner which supports the rejections of Appellants' invention as claimed in Claims 1-8 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a).

Appellants therefore maintain that each of the Examiner's rejections is in error and respectfully request that each of these rejections be reversed and that Claims 1-8 be allowed.

Respectfully submitted,

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## APPENDIX-CLAIMS ON APPEAL

1. A solar module comprising
  - a) at least one solar cell,
  - b) a front side composed of transparent polyurethane, and
  - c) a rear side.
2. The solar module of Claim 1 in which the rear side is composed of transparent polyurethane.
3. The solar module of Claim 1 in which the rear side is composed of plastic, glass or ceramic.
4. The solar module of Claim 1 in which the rear side is composed of opaque polyurethane.
5. The solar module of Claim 4 in which the opaque polyurethane contains a filler.
6. The solar module of Claim 5 in which the filler is selected from the group consisting of chalk, glass platelets, silicates and combinations thereof.
7. The solar module of Claim 1 in which the front side has a textured surface.
8. The solar module of Claim 1 in which the rear side is constructed in the form of cooling fins.
9. (Withdrawn) A process for producing the solar module of Claim 1 comprising applying polyurethane to the solar cells by a reaction injection molding process, a casting process, an injection molding process or a combination thereof.
10. (Withdrawn) The process of Claim 9 in which the solar cells are secured to a rear side of the module before transparent polyurethane is injected or cast on the front side.
11. (Withdrawn) The process of Claim 9 in which the rear side is composed of a plastic film or a composite plastic film which has been thermoformed together with the solar cells in a manner such that the solar cells are secured to the rear side of the module by the thermoforming process.